

*canadensis flaviflora*, *Oenothera grandiflora*, *Raimannia laciniata*, *Kneiffia pratensis*, *Bidens aristosa*, and *Artemisia caudata*.

Notwithstanding occasional discrepancies of the sort just noted which seem to have crept into the text, this work must be regarded as a noteworthy contribution to the phytogeographical literature of eastern North America, and one which will find a wide range of usefulness. The manner of presenting the subject matter is in some respects unique, while the attempt which has been made to correlate plant distribution with external factors and to outline the distributional trends of various species will encourage further investigation along these lines.

GEORGE E. NICHOLS

**Kraemer's Applied and Economic Botany\***

A book so ambitious in scope, attempting to appeal to such a large constituency, raises one or two questions the answers to which depend on the viewpoint more than they do on the facts of the case. Is it possible to make sufficiently intensive the treatment of any one of the subjects, which must at the same time be so presented that it will make a general appeal to all the readers to whom the book is addressed. Conversely, are the different classes of readers so diverse that any attempt to cater to all of them must end in such a general treatment, that the specific requirements of some group of specialists, chemists for instance, can not be met? The difference of motive here is obvious, and the compromise that Professor Kraemer has made of a difficult situation is, on the whole, a very satisfactory one.

The book has been divided into eight chapters, the headings to which are significant of the importance that Professor Kraemer has seen fit to give to each subject. The chapter-headings are as follows. I. Principal Groups of Plants (pp. 1-133), II. Cell-contents and Forms of Cells (pp. 134-297), III. Out and Inner Morphology of the Higher Plants (pp. 298-429), IV. Botanical

\* Kraemer, H. Applied and Economic Botany: Especially adapted for the use of students in Technical Schools, Agricultural, Pharmaceutical and Medical Colleges, and also as a book of reference for chemists, food analysts and students engaged in the morphological and physiological study of plants. Ph. 1-806. fig. 1-424. (including 2 colored plates). Published by the author. For sale by M. G. Smith, 145 North Tenth Street, Philadelphia. 1914. Price \$5.00.

Nomenclature (pp. 430-462), V. Classification of Angiosperms Yielding Economic Products (pp. 463-727), VI. Cultivation of Medicinal Plants (pp. 728-748), VII. Microscopic Technique and Reagents (pp. 749-776).

In a book, the title to which is applied and economic botany, the fifth chapter is the most cogent. About this chapter one or two very obvious reflections must spring up in the mind of everyone. In the first place it comprises only a little over one quarter of the whole book, and in the second place the heading of it is "Classification of Angiosperms Yielding Economic Products." Let us take only one class of readers to whom the preface suggests it may be useful, as a "reference book for manufacturers." Picture the attitude of mind of a busy manufacturer of fiber products wanting to find something more about his materials, when the "Classification of Angiosperms yielding Economic Products" is brought to his attention. The "Classification of Angiosperms" is very likely to be pushed off on the office boy.

This, of course, raises the very serious question whether or not a book on applied and economic botany should concern itself with classification of Angiosperms at all. The manufacturer we are sure considers it a nuisance, and perhaps that is the attitude of nearly everyone who might be expected to use the book. For classification implies taxonomy which has almost nothing to do with drugs, foods, fibers, and so forth. Our hypothetical manufacturer will find, of course, a description of the best-known fiber plants in their proper place in the classification, but he must know at least their genera to find them. Why should he be made to dig through endless families, etc., for his information? The same is true of all the other chief vegetable economic products.

This should not be construed as harsh criticism of a scholarly book; it is merely to raise the question with which this review started. Perhaps it is impossible to cater to so wide a field, and perhaps this book is not just the way to do it.

The work for which Professor Kraemer is best known is pharmacognosy, and of course this side of the book is very complete.

As a member of the committee of revision of the Pharmacopoeia of the United States, he certainly speaks with great authority. Large sections of the book are taken up with histological studies and from this standpoint, it must have a wide reading.

The enormous amount of information in the book and a splendidly prepared index will undoubtedly make its range of usefulness very great. That it will successfully cater to quite all the readers to whom it is addressed, some will doubt.

N. T.

**Bessey's Essentials of College Botany\***

Bessey's Essentials of Botany has been "entirely rewritten" by Professor Charles E. Bessey and his son, Professor Ernst A. Bessey, and now appears as Essentials of College Botany.

The range of subject matter is a wide one. The first five chapters deal mainly with histology and physiology; chapter five contains an interesting list of chemical substances—their formulas and something of their distribution in plants. The remaining seventeen chapters deal with the main plant divisions and their representatives.

The laboratory work is arranged to allow for choice as to the parts selected for use. It would seem as if the amount were not too great for one year's work by college students. In some cases, at least, a more critical type of work might be demanded of college students (*e. g.*, the *unsealed* apparatus in the CO<sub>2</sub> experiment on page 102). The present reviewer does not agree with the authors in preferring diagrams rather than detailed drawings, photographs, etc.; the type of labels or legends used do not sufficiently compensate for the character of the illustrations used; pages 72, 107, 230, and 256 furnish examples of illustrations that would mean little even to a college student.

JEAN BROADHURST

TEACHERS COLLEGE

PROCEEDINGS OF THE CLUB

JANUARY 12, 1915.

The annual meeting of the Club was held January 12, 1915, in the American Museum of Natural History at 8:15 P.M. President Harper presided. Ten persons were present.

\* Holt & Co., N. Y. 1914.